

REMARKS

I. Oath / Declaration

In the Office Action dated November 16, 2004, the Examiner indicated that the Oath or Declaration is defective with respect to the mailing address. The Examiner stated that an application data sheet may be provided to correct this deficiency. The Applicants are therefore providing as "Appendix A" with this response, an application data sheet with the appropriate mailing address information. The Applicants therefore respectfully request entry of the enclosed application data sheet and withdrawal of the objection to the Oath/Declaration.

II. Specification

The Examiner objected to the disclosure because of the following informalities:

On page 8, line 6 of paragraph 28, delete "FIG 1", and insert -FIG. 2--.

On page 8, line 7 of paragraph 28, delete "225", and insert -224--.

On page 8, line 8 of paragraph 28, delete "FIG. 1", and insert -FIG. 2—

On page 9, line 1 of paragraph 29, delete "FIG 1", and insert -FIG. 2--.

On page 11, line 3 of paragraph 35, delete "202", and insert -302--.

On page 13, line 1 of paragraph 41, delete "400", and insert -500--.

On page 13, line 2 of paragraph 43, delete "621", insert -608--.

On page 14, line 2 of paragraph 45, delete "715", and insert -716--.

On page 14, line 4 of paragraph 45, delete "amplifier 722", and insert - amplifier 724--.

On page 14, line 4 of paragraph 45, delete "Resistor 724", and insert - Resistor 725--.

The Examiner indicated that appropriate correction is required. Per this requirement, the Applicants has amended the specification as indicated herein to correct these informalities. The Applicants therefore submit that this objection has now been overcome. The Applicants therefore respectfully requests withdrawal of this objection.

III. Claim Rejections Under 35 U.S.C. §102

Prima Facie Anticipation Under 35 U.S.C. § 102

A general definition of *prima facie* unpatentability under 35 U.S.C. § 102 is provided at 37 C.F.R. §1.56(b)(2)(ii):

A *prima facie* case of unpatentability is established when the information *compels a conclusion* that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability. (*emphasis added*)

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundscriber Corp. v. United States*, 360 F.2d 954, 960, 148 USPQ 298, 301 (Ct. Cl.), adopted, 149 USPQ 640 (Ct. Cl. 1966)), cert. denied, 469 U.S. 851 (1984). Thus, to anticipate the Applicants' claims, the reference(s) cited by the Examiner must disclose each element recited therein. "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

To overcome the anticipation rejection, the Applicants need only demonstrate that not all elements of a *prima facie* case of anticipation have been met, *i. e.*, show that the reference cited by the Examiner fails to disclose every element in each of the Applicants' claims. "If the examination at the initial state does not produce a *prima facie* case of unpatentability, then without more the Applicant is entitled to grant of the patent." *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1444 (Fed. Cir. 1992).

Davey et al.

Claims 1, 2, 4, 6-11, 15, 16, 18, and 20 were rejected under 35 U.S.C. 102(b) as being anticipated by Davey et al (U.S. Patent No. 5,161,410).

The Examiner argued with regard to locating a bridge circuit on a physical property sensor substrate where the bridge circuit includes a heating element, a plurality of resistors and at least one compensating resistor, as shown in claims 1 and 15, that Davey et al. teaches a mass flow sensor circuit on a substrate that includes resistors, a heating element and a sensor that compensates the heating element. In support of this argument, the Examiner cited col. 5, lines 6-17; col. 8, lines 16-42; Fig. 1, Fig. 3, resistors 102, 104, heating element 16, sensor 100 of Davey et al.

The Applicants respectfully disagrees with this assessment. Applicants' amended claim 1 teaches the step of locating a bridge circuit on a physical property sensor substrate wherein the bridge circuit comprises a plurality of components, including at least one (*i.e.*, one or more) heating element and a plurality of resistors, including at least one compensating resistor for compensating a

temperature coefficient of resistance of the one or more of the heating elements and a temperature coefficient of resistance of the plurality of components and a temperature dependence of a physical property thereof. Applicants notes that resistors 102, 104 and/or sensor 100 of Davey et al cited by the Examiner do not provide for the compensation of all three factors claimed by Applicants' invention --- that is, compensating a temperature coefficient of resistance of the at least one heating element and a temperature coefficient of resistance of the plurality of components and a temperature dependence of a physical property thereof.

Neither col. 5, lines 6-17; col. 8, lines 16-42; Fig. 1, Fig. 3, resistors 102, 104, heating element 16, sensor 100 of Davey et al cited by the Examiner teach all three compensation factors taught by Applicants' amended claim 1. In fact, the Applicants notes that the temperature dependence of the fluid property is not even mentioned by Davey et al. The Examiner has not provided evidence to the contrary but has instead merely cited portions of Davey et al without a substantial explanation of how such cited sections and features of Davey et al disclose all of the limitations of Applicants' claim 1. The Applicants reminds the Examiner that the reference should not be taken out of context to in effect produced the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context.

With regard to driving an imbalance of the bridge circuit to zero and a supply voltage to a level required to stabilize the heating element at a required temperature above ambient temperature and where the heating element comprises a thin-film heating material, as shown in claims 1 and 15, the Examiner argued that Davey et al. teaches balancing the bridge circuit by keeping the thin film heating element at a certain temperature above the ambient temperature sensed by a temperature sensor by using a differential amplifier to change the supply voltage of

the bridge. In support of this argument, the Examiner cited col. 8 lines 16-42 of Davey et al.

The Applicants respectfully disagrees with this assessment. Applicants' claim 1 includes the step of simultaneously driving an imbalance of the bridge circuit to a zero value and a supply voltage thereof to a level required to stabilize the heating element at a required temperature rise above an ambient temperature, wherein the heating element comprises a thin-film heating material. Col. 8, lines 16-42 of Davey et al does not mention or disclose an imbalance of the bridge circuit and/or a zero value and/or a voltage level for stabilizing the heating element. Instead, Davey et al at col. 8, lines 27-30 only indicates that the bridge will balance when the temperature of the heating element 16 is equal to the sum of the temperature sensed by the sensing element 100 and the predetermined constant differential temperature established by the reference resistors 102 and 104. No mention is made by Davey et al of simultaneously driving the imbalance of the bridge circuit to a zero value and the supply voltage to a level required to stabilize the heating element at a required temperature rise above an ambient temperature, wherein the heating element comprises a thin-film heating material. In fact, no mention is made by Davey et al of a required temperature rise and a stabilization voltage, nor simultaneously driving.

With regard to dynamically compensating for a temperature coefficient for a temperature coefficient of resistance of the thin-film heating material, temperature dependence of the components on the bridge and temperature dependence of the physical property sensor, as shown in claims 1 and 15, the Examiner argued that Davey et al. teaches balancing the heating element bridge circuit to compensate for changes in the ambient temperature which affect all components of the circuit. In

support of this argument, the Examiner cited col. 8, line 16 – col. 9, line 20 of Davey et al.

The Applicants respectfully disagree with this assessment. Dynamic compensation for all three factors --- temperature coefficient of resistance of the thin film-heating material, temperature dependence of the components of the bridge, and temperature dependence of the physical property sensor -- is not taught by Davey at al col. 8, line 16 – col. 9, line 20. The Examiner has not provided sufficient evidence to the contrary. In fact, the Examiner has not specified which portions of col. 8, line 16 – col. 9, line 20 of Davey at al disclose all three features. The Applicants notes that the temperature dependence of the fluid property is not even mentioned by Davey et al. Again, the Examiner has instead merely cited portions of Davey et al without a substantial explanation of how such cited sections and features of Davey et al disclose all of the limitations of Applicants' claim 1. The Applicants reminds the Examiner that the reference should not be taken out of context to in effect produced the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context.

With regard to a Wheatstone Bridge Circuit, as shown in claims 2 and 16, the Examiner argued Davey et al. teaches a Wheatstone bridge. In support of this argument, the Examiner cited col. 8, lines 18-21; Fig. 3 of Davey et al. The Applicants respectfully disagrees with this assessment and submits that the arguments presented above against the rejection to claim 1 apply equally to the rejection to claims 2 and 16. Thus, in light of the fact that Davey et al does not disclose all of the features of Applicants' claim 1 as indicated above, any showing of a Wheatstone bridge on the part of Davey is irrelevant. Therefore, the Applicants respectfully submits that the rejection to claims 2 and 16 is traversed and should be withdrawn.

With regard to increasing a resistance value of at least one compensating resistor to compensate for temperature dependence of a physical property value, as shown in claims 4 and 18, the Examiner argued that Davey et al. teaches a temperature sensor that balances the heating element. In support of this argument, the Examiner cited col. 8, lines 16-42 of Davey et al. The Applicants respectfully disagrees with this assessment and notes that the arguments presented above with respect to claim 1 apply equally to the rejection to claims 4 and 18. Additionally, the Applicants points out that that Davey et al at col. 8, lines 16-43 only teaches a temperature sensor that balance a heating element, but makes no mention or teaching of increasing the resistance value of one or more of the compensating resistors to compensate for the temperature dependence of a physical property value. This is quite different from a temperature sensor that balances a heating element.

The Examiner has not explained how col. 8, lines 16-43 of Davey et al discloses increasing the resistance value of one or more of the compensating resistors to compensate for the temperature dependence of a physical property value. The Applicants notes that the temperature dependence of the fluid property is not even mentioned by Davey et al. Again, the Examiner has instead merely cited portions of Davey et al without a substantial explanation of how such cited sections and features of Davey et al disclose all of the limitations of Applicants' claims 4 and 18. The Applicants remind the Examiner that the reference should not be taken out of context to in effect produced the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. Based on the foregoing, the Applicants submit that the rejection to claims 4 and 18 has been traversed. The Applicants therefore respectfully request that the rejection to claims 4 and 18 be withdrawn.

With regard to measuring heater power and varying the constant temperature rise with the ambient temperature to compensate for the effects of the components, as shown in claims 6 and 20, the Examiner argued that Davey et al. teaches changing the temperature of the heating element as the ambient temperature changes. The Examiner cited col. 8, lines 16-42 of Davey et al in support of this argument. The Applicants respectfully disagree with this assessment and notes that the arguments presented above with respect to the rejection to claim 1 apply equally to the rejection to claims 6 and 20.

Applicants note that claim 6 is directed toward the step of measuring a heater power of the heating element at an approximately constant temperature rise above the ambient temperature, wherein the approximately constant temperature rise varies with the ambient temperature to compensate for a combined effect of the thin-film heating material, the components of the bridge circuit, and a fluid property to be measured by the physical property sensor. Similarly, Applicants' claim 20 indicates wherein a heater power of the heating element is measurable at an approximately constant temperature rise above the ambient temperature, wherein the approximately constant temperature rise varies with the ambient temperature to compensate for a combined effect of the thin-film heating material, the components of the bridge circuit, and a fluid property to be measured by the physical property sensor.

Applicants note that col. 8, lines 16-42 of Davey et al not mention an approximately constant temperature rise above the ambient temperature, wherein such a rise varies with the ambient temperature to compensate for the combined effect of the thin-film heating material, the components of the bridge circuit, and a fluid property to be measured by the physical property sensor. Thus, it is clear that

col. 8, lines 16-42 of Davey et al does not disclose all of the limitations of Applicants' claims 6 and 20. Based on the foregoing, the Applicants submits that the rejection to claims 6 and 20 has been traversed. The Applicants therefore respectfully requests withdrawal of the aforementioned rejection to claims 6 and 20.

With regard to minimizing the change in bridge voltage, as indicated by claim 7, the Examiner argued that Davey et al teaches choosing resistors to stabilize and balance the bridge voltage. In support of this argument, the Examiner cited col. 8, lines 16-42 of Davey et al. The Applicants respectfully disagrees with this assessment and submits that the arguments present above against the rejection to claim 1 apply equally to the rejection to claim 7.

Applicants' claim 7 is directed toward the step of minimizing a change in a bridge voltage of the bridge circuit as the ambient temperature is varied over a required range by an optimal choice of a value of the compensating resistor. Col. 8, lines 16-42 of Davey et al do not mention or teach minimizing a change in the bridge voltage as the ambient temperature is varied over a required range by an optimal choice of a value of the compensating resistor. The Examiner has not explained how col. 8, lines 16-42 of Davey et al disclose all of the features and limitations of Applicants' claim 7. Based on the foregoing, the Applicants submits that that the rejection to claim 7 has been traversed. The Applicants reminds the Examiner that the reference should not be taken out of context to in effect produced the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. Based on the foregoing, the Applicants submits that the rejection to claim 7 has been traversed. The Applicants therefore respectfully requests that the rejection to claim 7 be withdrawn.

With regard to selecting the bridge voltage as a supply voltage generated by an amplification of the bridge circuit imbalance, as indicated by claim 8, the Examiner argued that Davey et al. teaches amplifying the bridge voltage for the supply voltage. In support of this argument, the Examiner cited Fig. 3, amplifier 108 of Davey et al.

The Applicants respectfully disagrees with this assessment and submit that the arguments presented above against the rejection to Applicants' claims 1 and 7 apply equally to the rejection to Applicants' claim 8. Applicants' claim 8 is directed toward the step of selecting the bridge voltage as a supply voltage generated by an amplification of a bridge circuit imbalance, such that the bridge voltage serves as a sensor output signal of the physical property sensor. Neither cited Fig. 3 or the amplifier 108 of Davey et al cited by the Examiner show all of the limitations of Applicants' claim 8, including selecting the bridge voltage as a supply voltage generated by an amplification of a bridge circuit imbalance, such that the bridge voltage serves as a sensor output signal of the physical property sensor.

The Examiner has not explained how Fig. 3 or the amplifier 108 of Davey et al disclose all of the limitations of Applicants' claim 8 and all of the limitations of claims 1 and 7 from which Applicants' claim 8 depends. The Applicants again reminds the Examiner that the reference should not be taken out of context to in effect produced the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. Based on the foregoing, the Applicants submits that the rejection to claim 8 has been traversed. The Applicants therefore respectfully requests that the rejection to claim 8 be withdrawn.

With regard to the bridge voltage serving as a sensor output signal, as indicated in claim 9, the Examiner argued that Davey et al. teaches a bridge voltage that depends on the voltage of the heater element and the ambient temperature. In support of this argument, the Examiner cited Fig. 3 of Davey et al. The Applicants respectfully disagree with this assessment and note that the arguments presented above against the rejection to claims 1 and 7 apply equally to the rejection to claim 9.

Applicants' claim 9 is directed toward the step of selecting a bridge voltage as a voltage of the heater element, such that the bridge voltage serves as a sensor output signal of the physical property sensor. The Applicants note that FIG. 3 of Davey et al does not disclose all of the limitations of Applicants' claim 9, which includes all of the limitations of Applicants' claims 1 and 7. Thus, any bridge voltage present in FIG. 3 of Davey et al is irrelevant in light of the fact that FIG. 3 of Davey et al does not teach, disclose or suggest all of the limitations of Applicants' claims 1, 7 and 9. Based on the foregoing, the Applicants submit that the rejection to claim 9 has been traversed. Applicants respectfully request withdrawal of the rejection to claim 9.

With regard to a front end analog circuit, as shown in claims 10 and 16, the Examiner argued that Davey et al. teaches an analog sensor circuit (Fig. 3, col. 8, lines 32-42). The Applicants respectfully disagree with this assessment and notes that the arguments presented above against the rejection to claims 1 and 15 apply equally to the rejection to claims 10 and 16.

Applicants' claim 10 indicates that the bridge circuit of claim 1 comprises a front-end analog circuit of the physical property sensor. Similarly, Applicants' claim 16 indicates that the bridge circuit limitation of claim 15 comprises a front-end

analog circuit of the physical property sensor and wherein the bridge circuit further comprises a Wheatstone Bridge circuit. Applicants note that Fig. 3, col. 8, lines 32-42 of Davey et al does not mention, suggest or disclose front-end analog circuit or the fact that such a front-end analog circuit can be configured as a wheatstone bridge circuit. The Examiner has not provided evidence to the contrary. Based on the foregoing, the Applicants submit that the rejection to claim 10 has been traversed. Applicants respectfully request withdrawal of the rejection to claim 10.

With regard to a gas property sensor, as shown in claim 11, the Examiner argued that Davey et al. teaches a gas property sensor (col. 4, lines 34-49). The Applicants respectfully disagree with this assessment. Col. 4, lines 34-49 of Davey et al does not disclose, suggest or show all of the limitations of Applicants' claim 11, including all of the limitations of claim 1 from which claim 11 depends. The Applicants note that the arguments presented above against the rejection to claim 1 apply equally to claim 11. Davey et al. thus does not disclose a gas property sensor having all of the limitations and features of Applicants' claims 1 and 11. Thus, because all such features are not taught by Davey et al, the Applicants submit that the rejection to claim 11 has been traversed. The Applicants therefore respectfully request withdrawal of the rejection to claim 11.

The Applicants remind the examiner that in order to succeed in a rejection to a claim or a group of claims under 35 U.S.C. 102(b), the reference cited as a basis for rejecting the claim(s) at issue must disclose each and every element of the rejected claim. If, as indicated above with respect to the requirements for prima facie anticipation under 35 U.S.C. 102 as indicated above, even one element or feature of the rejected claim(s) is not disclosed in the cited reference, the rejection fails and must be withdrawn.

Based on the foregoing, the Applicants submit that Davey et al fails to disclose every element and limitation of Applicants' claims 1, 2, 4, 6-11, 15, 16, 18 and 20. Thus, the Applicants submit that the rejection to claims 1, 2, 4, 6-11, 15, 16, 18 and 20 has been traversed. Therefore, the Applicants respectfully request withdrawal of the rejection to claims 1, 2, 4, 6-11, 15, 16, 18 and 20.

IV. Claim Rejections Under 35 U.S.C. §103

Requirements for Prima Facie Obviousness

The obligation of the Examiner to go forward and produce reasoning and evidence in support of obviousness under 35 U.S.C. §103 is clearly defined at M.P.E.P. §2142:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

M.P.E.P. §2143 sets out the three basic criteria that a patent examiner must satisfy to establish a *prima facie* case of obviousness necessary for establishing a rejection to a claim under 35 U.S.C. §103:

1. some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
2. a reasonable expectation of success; and
3. the teaching or suggestion of all the claim limitations by the prior art reference (or references when combined).

It follows that in the absence of such a *prima facie* showing of obviousness under 35 U.S.C. §103 by the examiner (assuming there are no objections or other

grounds for rejection), an Applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443 (Fed. Cir. 1992).

Thus, in order to support an obviousness rejection under 35 U.S.C. §103, the Examiner is obliged to produce evidence compelling a conclusion that each of the three aforementioned basic criteria has been met.

Davey et al in view of Lee et al

Claims 3 and 17 were rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Davey et al. in view of Lee et al. (US Patent No. 6,346,703).

The Examiner argued that Davey et al. teaches all the limitations of claim 1 upon which claim 3 depends and claim 15 upon which claim 17 depends. The Examiner admitted that Davey et al does not teach one other compensating resistor, as shown in claims 3 and 17. The Examiner argued, however, that Lee et al. teaches three compensating resistors in a bridge circuit (citing col. 2, line 57 – col. 3, line 9 of Davey et al). The Examiner argued that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow sensor, as taught by Davey et al., to include three compensating resistors, as taught by Lee et al., because then resistance error would have been further reduced (citing Lee et al., col. 2, lines 21-col. 3, line 9).

The Applicants respectfully disagree with this assessment and submits that the arguments presented above against the rejection to claim 1 and 15 under 35 U.S.C. § 102 apply equally to the rejection to claims 3 and 17 under 35 U.S.C. § 103. As indicated above, the Examiner has failed to show that Davey et al teaches all of the claim limitations of Applicants' claims 1 and 15 upon which claims 3 and 17 depend. Because all of the claim limitations of claim 1 and 15 are not taught by Davey et al,

the rejection to claims 3 and 17 under 35 U.S.C. § 103 fails under the third prong of the aforementioned prima facie obviousness test. Thus, the features of col. 2, lines 21 – col. 3 line 9 of Lee et al cited by the Examiner are irrelevant in light of the fact that Davey et al does not teach all of the limitations of Applicants' claims 3 and 17.

With respect to the second prong of the aforementioned prima facie obviousness test, the Applicants note that the Examiner has not provided evidence of a reasonable expectation of success for combining Davey et al with Lee et al to achieve all of the features and limitations of Applicants' claims 3 and 17.

With respect to the first prong of the aforementioned prima facie obviousness test indicated above, the Applicants note that the Examiner has not provided a sufficient reason for explaining why one skilled in the art would have been motivated to design a device that includes all of the features taught by Applicants claims 3 and 17 and the specification thereof. The Applicants remind the Examiner that the references may not be taken out of context and combined without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. The resultant combination would not yield the invention as claimed. Claims 3 and 17 are rejected under 35 U.S.C. § 103 and no showing has been made to provide the motivation as to why one of skill in the art would be motivated to make such a combination, and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed.

Based on the foregoing, the Applicants submit that the rejection to claims 3 and 17 has been traversed. The Applicant therefore respectfully requests that the rejection to claims 3 and 17 under 35 U.S.C. § 103 be withdrawn.

Davey et al in view of Bonne et al

Claims 5, 12, 14 and 19 were rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Davey et al. in view of Bonne et al. (US Patent No. 6,234,016).

The Examiner argued that Davey et al. teaches all the limitations of claim 1 upon which claims 5 and 12 depend and claim 15 upon which claim 19 depends. The Examiner admitted that Davey et al. does not teach the physical properties, as shown in claims 5 and 19, or a liquid property sensor, as shown in claim 12. The Examiner argued, however, that Bonne et al. teaches measuring specific heat and measuring fluid properties. In support of this argument, the Examiner cited col. 6, lines 16-18 of Davey et al. The Examiner argued that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow sensor, as taught by Davey et al., to include measuring specific heat and fluid properties, as taught by Boone et al., because then the sensor would have been functional for other measurements. The Examiner argued that claim 14 contains limitations similar to those in claims 1, 4, 5, 7 and 8 and rejected claim 14 on the same grounds.

The Applicants respectfully disagree with this assessment and submits that the arguments presented above against the rejection to claims 1, 4, 5, 7 and 8 under 35 U.S.C. § 102 apply equally to the rejection to claims 5, 12, 14 and 19 under 35 U.S.C. § 103. As indicated above, the Examiner has failed to show that Davey et al teaches all of the claim limitations of Applicants' claim 1 upon which claims 5 and 12 depend and claim 15 upon which claim 19 depends. Because all of the claim limitations of claim 1 are not taught by Davey et al, the rejection to claims 5, 12, 14 and 19 under 35 U.S.C. § 103 fails under the third prong of the aforementioned *prima facie* obviousness test.

The Applicants note, for example, that Applicants' claim 5 teaches that the physical property value comprises a value of at least one of the following: thermal conductivity, specific heat, compressibility, octane number, heating value, speed of sound, and viscosity. Boone et al does not teach one or more of all of the following: thermal conductivity, specific heat, compressibility, octane number, heating value, speed of sound, and viscosity. Col. 6, lines 16-18 of Davey et al makes no mention, for example, of octane number or the speed of sound. A similar argument applies to the rejection to claim 14.

The Applicant also submits that the rejection claims to 5, 12, 14 and 19 under 35 U.S.C. § 103 fails under the first prong of the aforementioned prima facie obviousness test. That is, the Examiner has not provided some suggestion or motivation, either in the Davey et al or Bonne et al references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings in the manner suggested by the Examiner in order to derive all of the claim limitations of claims 5, 12, 14 and 19.

With respect to the second prong of the aforementioned prima facie obviousness test, the Applicants note that the Examiner has not provided evidence of a reasonable expectation of success for combining Davey et al with Bonne et al to achieve all of the features and limitations of Applicants' claims 5, 12, 14 and 19.

With respect to the first prong of the aforementioned prima facie obviousness test indicated above, the Applicants note that the Examiner has not provided a sufficient reason for explaining why one skilled in the art would have been motivated to design a device that includes all of the features taught by Applicants claims 5, 12, 14 and 19 and the specification thereof. The Applicants remind the Examiner that the references may not be taken out of context and combined without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. The

resultant combination would not yield the invention as claimed. Claims 5, 12, 14 and 19 are rejected under 35 U.S.C. 103 and no showing has been made to provide the motivation as to why one of skill in the art would be motivated to make such a combination, and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed.

Based on the foregoing, the Applicants submit that the rejection to claims 5, 12, 14 and 19 has been traversed. The Applicant therefore respectfully requests that the rejection to claims 5, 12, 14 and 19 under 35 U.S.C. § 103 be withdrawn.

Davey et al in view of Bonne et al

Claim 13 was rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Davey et al. in view of Bonne (US Patent No. 5,237,523)

The Examiner argued that Davey et al. teaches all the limitations of claim 1 upon which claim 13 depends. The Examiner admitted that Davey et al. does not teach a solid property sensor, as shown in claim 13. The Examiner argued, however, that Davey et al teaches a solid property sensor (col. 5, lines 24-35). The Examiner therefore argued that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow sensor, as taught by Davey et al., to include a solid property sensor, as taught by Bonne, because then the sensor would have been functional for other measurements.

The Applicants respectfully disagree with this assessment and notes that the arguments presented above against the rejection to claim 1 under 35 U.S.C. § 102 apply equally to the rejection to claims 13 under 35 U.S.C. § 103. As indicated above, the Examiner has failed to show that Davey et al teaches all of the claim limitations of Applicants' claim 1 upon which claim 13 depends. Because all of the claim limitations of claim 1 are not taught by Davey et al, the rejection claim

13under 35 U.S.C. § 103 fails under the third prong of the aforementioned prima facie obviousness test.

It is also important to note that col. 5, lines 24-35 of Bonne et al does not teach a solid property sensor, but instead teaches at col. 5, line 33 that "...solid substances of the sensor may be considered." In other word, solid substances associated with the sensor are considered, not solid properties associated with the substance under detection.

With respect to the second prong of the aforementioned prima facie obviousness test, the Applicants note that the Examiner has not provided evidence of a reasonable expectation of success for combining Davey et al with Bonne et al to achieve all of the features and limitations of Applicants' claims 5, 12, 14 and 19.

With respect to the first prong of the aforementioned prima facie obviousness test indicated above, the Applicants note that the Examiner has not provided a sufficient reason for explaining why one skilled in the art would have been motivated to design a device that includes all of the features taught by Applicants claim 13 and the specification thereof. The Applicants remind the Examiner that the references may not be taken out of context and combined without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. The resultant combination would not yield the invention as claimed. Claims 13 was rejected under 35 U.S.C. 103 and no showing has been made to provide the motivation as to why one of skill in the art would be motivated to make such a combination (i.e., combining Davey et al with Bonne et al), and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed.

Based on the foregoing, the Applicants submit that the rejection to claim 13 has been traversed. The Applicants therefore respectfully request that the rejection to claim 13 under 35 U.S.C. § 103 be withdrawn.

V. Conclusion

In view of the foregoing discussion, the Applicants have responded to each and every rejection of the Official Action. The Applicants have clarified the structural distinctions of the present invention by amendments herein. The foregoing discussion and amendments do not present new issues for consideration and no new search is necessitated. Such amendments are supported by the specification and do not constitute new matter. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections and further examination of the present application.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned representative to conduct an interview in an effort to expedite prosecution in connection with the present application.

Respectfully submitted,



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